AMENDMENTS TO THE CLAIMS

Claims 2-28 (cancelled).

29. (New) A method of detecting the presence or absence of a plurality of target analytes, comprising

(a) providing a first substrate with a surface comprising a plurality of assay wells, wherein said assay wells contain sample solutions each having a plurality of target analytes;

(b) providing a second substrate comprising a plurality of array locations, each array location comprising a plurality of discrete sites, wherein said sites comprise different bioactive agents;

(c) dipping said array locations into said assay wells under conditions suitable for binding of said target analytes to said bioactive agents, thereby processing said sample solutions in parallel; and

(d) detecting the presence or absence of said target analytes.

30. (New) The method of claim 29, wherein said target analytes comprise nucleic acids or nucleic acid analogs.

31. (New) The method of claim 30, wherein said nucleic acids comprise single nucleotide polymorphisms.

32. (New) The method of claim 31, comprising multiplex PCR amplification of said single nucleotide polymorphisms and subsequent binding to said bioactive agents.

33. (New) The method of claim 30, wherein said nucleic acids are labeled with fluorochromes during PCR amplification.

34. (New) The method of claim 29, wherein said bioactive agents are selected from the group consisting of peptides, peptide structural analogs, saccharides, fatty acids, steroids, purines, and pyrimidines.

35. (New) The method of claim 29, wherein said array locations comprise from 10,000,000 to 2,000,000,000 bioactive agents per square centimeter.

36. (New) The method of claim 29, wherein said array locations comprise from 100,000 to about 10,000,000 bioactive agents per square centimeter.

37. (New) The method of claim 29, wherein said array locations comprise from 10,000 to about 100,000 bioactive agents per square centimeter.

38. (New) The method of claim 29, wherein said bioactive agents are directly coupled to said array locations.

39. (New) The method of claim 29, wherein said bioactive agents are attached to microspheres and wherein said microspheres are associated with said array locations.

40. (New) The method of claim 29, wherein said target analytes comprise decoder binding ligands.

41. (New) The method of claim 29, wherein said target analyte is labeled.

42. (New) The method of claim 41, wherein said label comprises an optical label.

43. (New) The method of claim 42, wherein said optical label comprises a fluorochrome.

44. (New) The method of claim 29, wherein said detecting is done through the use of a change in optical signature.

45. (New) The method of claim 29, further comprising quantitating differences in concentrations of said target analytes

46. (New) The method of claim 45, further comprising quantitating a specific mRNA.

47. (New) The method of claim 46, comprising quantitating said specific mRNA in the presence of total cellular mRNA.

48. (New) The method of claim 29, wherein said assay wells comprise wells of a microtiter plate.

49. (New) The method of claim 29, comprising 96 wells.

50. (New) The method of claim 29, comprising 384 wells.

51. (New) The method of claim 29, comprising 1536 wells.